

#15



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1648

RAW SEQUENCE LISTING

DATE: 01/29/2002

PATENT APPLICATION: US/09/214,701

TIME: 12:09:36

Input Set : D:\40646-20002.txt

Output Set: N:\CRF3\01292002\I214701.raw

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 TECH CENTER 1600/2900

4 <110> APPLICANT: Lowell, George
 5 Vancott, Thomas
 6 Birx, Deborah
 8 <120> TITLE OF INVENTION: PROTEIN AND PEPTIDE VACCINES FOR
 9 INDUCING MUCOSAL IMMUNITY
 11 <130> FILE REFERENCE: 40646-20002.00
 13 <140> CURRENT APPLICATION NUMBER: US 09/214,701
 14 <141> CURRENT FILING DATE: 1999-09-30
 16 <150> PRIOR APPLICATION NUMBER: PCT/US 97/12253
 17 <151> PRIOR FILING DATE: 1997-07-10
 19 <150> PRIOR APPLICATION NUMBER: US 60/021,687
 20 <151> PRIOR FILING DATE: 1996-07-10
 22 <160> NUMBER OF SEQ ID NOS: 18
 24 <170> SOFTWARE: FastSEQ for Windows Version 4.0
 26 <210> SEQ ID NO: 1
 27 <211> LENGTH: 868
 28 <212> TYPE: PRT
 29 <213> ORGANISM: Virus HIV-1
 31 <400> SEQUENCE: 1
 32 Met Ala Met Arg Ala Lys Gly Ile Arg Lys Asn Cys Gln His Leu Trp
 33 1 5 10 15
 34 Arg Trp Gly Thr Met Leu Leu Gly Met Leu Met Ile Cys Ser Ala Ala
 35 20 25 30
 36 Ala Asn Leu Trp Val Thr Val Tyr Tyr Gly Val Pro Val Trp Lys Glu
 37 35 40 45
 38 Ala Thr Thr Thr Leu Phe Cys Ala Ser Asp Ala Lys Ala Tyr Asp Thr
 39 50 55 60
 40 Glu Ala His Asn Val Trp Ala Thr His Ala Cys Val Pro Thr Asn Pro
 41 65 70 75 80
 42 Asn Pro Gln Glu Val Val Leu Glu Asn Val Thr Glu Asn Phe Asn Met
 43 85 90 95
 44 Trp Lys Asn Asn Met Val Glu Gln Met His Glu Asp Ile Ile Ser Leu
 45 100 105 110
 46 Trp Asp Gln Ser Leu Lys Pro Cys Val Lys Leu Thr Pro Leu Cys Val
 47 115 120 125
 48 Thr Leu Asn Cys Thr Asp Leu Asn Thr Asn Asn Thr Thr Asn Thr Thr
 49 130 135 140
 50 Glu Leu Ser Ile Ile Val Val Trp Glu Gln Arg Gly Lys Gly Glu Met
 51 145 150 155 160
 52 Arg Asn Cys Ser Phe Asn Ile Thr Thr Ser Ile Arg Asp Lys Val Gln
 53 165 170 175
 54 Arg Glu Tyr Ala Leu Phe Tyr Lys Leu Asp Val Glu Pro Ile Asp Asp
 55 180 185 190

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56 Asn Lys Asn Thr Thr Asn Asn Thr Lys Tyr Arg Leu Ile Asn Cys Asn
57      195      200      205
58 Thr Ser Val Ile Thr Gln Ala Cys Pro Lys Val Ser Phe Glu Pro Ile
59      210      215      220
60 Pro Ile His Tyr Cys Thr Pro Thr Gly Phe Ala Leu Leu Lys Cys Asn
61 225      230      235      240
62 Asp Lys Lys Phe Asn Gly Thr Gly Pro Cys Thr Asn Val Ser Thr Val
63      245      250      255
64 Gln Cys Thr His Gly Ile Arg Pro Val Val Ser Thr Gln Leu Leu Leu
65      260      265      270
66 Asn Gly Ser Leu Ala Glu Glu Glu Val Val Ile Arg Ser Glu Asn Phe
67      275      280      285
68 Thr Asn Asn Ala Lys Thr Ile Ile Val Gln Leu Asn Val Ser Val Glu
69      290      295      300
70 Ile Asn Cys Thr Arg Pro Asn Asn His Thr Arg Lys Arg Val Thr Leu
71 305      310      315      320
72 Gly Pro Gly Arg Val Trp Tyr Thr Thr Gly Glu Ile Leu Gly Asn Ile
73      325      330      335
74 Arg Gln Ala His Cys Asn Ile Ser Arg Ala Gln Trp Asn Asn Thr Leu
75      340      345      350
76 Gln Gln Ile Ala Thr Thr Leu Arg Glu Gln Phe Gly Asn Lys Thr Ile
77      355      360      365
78 Ala Phe Asn Gln Ser Ser Gly Gly Asp Pro Glu Ile Val Met His Ser
79      370      375      380
80 Phe Asn Cys Gly Gly Glu Phe Phe Tyr Cys Asn Ser Thr Gln Leu Phe
81 385      390      395      400
82 Asn Ser Ala Trp Asn Val Thr Ser Asn Gly Thr Trp Ser Val Thr Arg
83      405      410      415
84 Lys Gln Lys Asp Thr Gly Asp Ile Ile Thr Leu Pro Cys Arg Ile Lys
85      420      425      430
86 Gln Ile Ile Asn Arg Trp Gln Val Val Gly Lys Ala Met Tyr Ala Leu
87      435      440      445
88 Pro Ile Lys Gly Leu Ile Arg Cys Ser Ser Asn Ile Thr Gly Leu Leu
89      450      455      460
90 Leu Thr Arg Asp Gly Gly Gly Glu Asn Gln Thr Thr Glu Ile Phe Arg
91 465      470      475      480
92 Pro Gly Gly Gly Asp Met Arg Asp Asn Trp Arg Ser Glu Leu Tyr Lys
93      485      490      495
94 Tyr Lys Val Val Lys Ile Glu Pro Leu Gly Val Ala Pro Thr Lys Ala
95      500      505      510
96 Lys Arg Arg Val Val Gln Arg Glu Lys Arg Ala Val Gly Met Leu Gly
97      515      520      525
98 Ala Met Phe Leu Gly Phe Leu Gly Ala Ala Gly Ser Thr Met Gly Ala
99      530      535      540
100 Thr Ser Met Ala Leu Thr Val Gln Ala Arg Gln Leu Leu Ser Gly Ile
101 545      550      555      560
102 Val Gln Gln Gln Asn Leu Leu Arg Ala Ile Lys Ala Gln Gln His
103      565      570      575
104 Leu Leu Gln Leu Thr Val Trp Gly Ile Lys Gln Leu Gln Ala Arg Ile

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105          580          585          590
106 Leu Ala Val Glu Arg Tyr Leu Lys Asp Gln Gln Leu Leu Gly Phe Trp
107          595          600          605
108 Gly Cys Ser Gly Lys Leu Ile Cys Thr Thr Ala Val Pro Trp Asn Ala
109          610          615          620
110 Ser Trp Ser Asn Lys Thr Leu Asp Gln Ile Trp Asn Asn Met Thr Trp
111 625          630          635          640
112 Met Glu Trp Asp Arg Glu Ile Asp Asn Tyr Thr His Leu Ile Tyr Thr
113          645          650          655
114 Leu Ile Glu Glu Ser Gln Asn Gln Gln Glu Lys Asn Gln Gln Glu Leu
115          660          665          670
116 Leu Gln Leu Asp Lys Trp Ala Ser Leu Trp Thr Trp Ser Asp Ile Thr
117          675          680          685
118 Lys Trp Leu Trp Tyr Ile Lys Ile Phe Ile Met Ile Val Gly Gly Leu
119          690          695          700
120 Ile Gly Leu Arg Ile Val Phe Ala Val Leu Ser Ile Val Asn Arg Val
121 705          710          715          720
122 Arg Gln Gly Tyr Ser Pro Leu Ser Phe Gln Thr Leu Leu Pro Asn Pro
123          725          730          735
124 Arg Gly Pro Asp Arg Pro Glu Gly Thr Glu Glu Gly Gly Gly Glu Arg
125          740          745          750
126 Gly Arg Asp Gly Ser Thr Arg Leu Val His Gly Phe Leu Ala Leu Val
127          755          760          765
128 Trp Asp Asp Leu Arg Ser Leu Cys Leu Phe Ser Tyr His Arg Leu Arg
129          770          775          780
130 Asp Leu Leu Leu Ile Val Ala Arg Ile Val Glu Leu Leu Gly Arg Arg
131 785          790          795          800
132 Gly Trp Glu Val Leu Lys Tyr Trp Trp Asn Leu Leu Gln Tyr Trp Ser
133          805          810          815
134 Gln Glu Leu Lys Asn Ser Ala Val Ser Leu Val Asn Val Thr Ala Ile
135          820          825          830
136 Ala Val Ala Glu Gly Thr Asp Arg Val Ile Glu Val Val Gln Arg Ile
137          835          840          845
138 Tyr Arg Ala Phe Leu His Ile Pro Arg Arg Ile Arg Gln Gly Phe Glu
139          850          855          860
140 Arg Ala Leu Leu
141 865
143 <210> SEQ ID NO: 2
144 <211> LENGTH: 5
145 <212> TYPE: PRT
146 <213> ORGANISM: Artificial Sequence
148 <220> FEATURE:
149 <223> OTHER INFORMATION: Hydrophobic peptide added to the terminus of the
150 antigenic peptide
152 <400> SEQUENCE: 2
153 Phe Leu Leu Ala Val
154 1 5
156 <210> SEQ ID NO: 3
157 <211> LENGTH: 5

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158 <212> TYPE: PRT
159 <213> ORGANISM: Artificial Sequence
161 <220> FEATURE:
162 <223> OTHER INFORMATION: Hydrophobic peptide added to the terminus of the
163     antigenic peptide
165 <400> SEQUENCE: 3
166 Val Ala Leu Leu Phe
167 1      5
169 <210> SEQ ID NO: 4
170 <211> LENGTH: 10
171 <212> TYPE: PRT
172 <213> ORGANISM: Artificial Sequence
174 <220> FEATURE:
175 <223> OTHER INFORMATION: Hydrophobic decapeptide
177 <400> SEQUENCE: 4
178 Gly Gly Tyr Cys Phe Val Ala Leu Leu Phe
179 1      5      10
181 <210> SEQ ID NO: 5
182 <211> LENGTH: 68
183 <212> TYPE: PRT
184 <213> ORGANISM: P. falciparum
186 <400> SEQUENCE: 5
187 Asn Ala Asn Pro Asn Ala Asn Pro Asn Ala Asn Pro Asn Ala Asn Pro
188 1      5      10      15
189 Asn Ala Asn Pro Asn Ala Asn Pro Asn Ala Asn Pro Asn Ala Asn Pro
190      20      25      30
191 Asn Ala Asn Pro Asn Ala Asn Pro Asn Ala Asn Pro Asn Ala Asn Pro
192      35      40      45
193 Asn Ala Asn Pro Asn Ala Asn Pro Asn Ala Asn Pro Asn Val Asp Pro
194      50      55      60
195 Asn Val Asp Pro
196 65
198 <210> SEQ ID NO: 6
199 <211> LENGTH: 20
200 <212> TYPE: DNA
201 <213> ORGANISM: Artificial Sequence
203 <220> FEATURE:
204 <223> OTHER INFORMATION: Synthetic linker
206 <400> SEQUENCE: 6
207 gatcccggt gactgactga
209 <210> SEQ ID NO: 7
210 <211> LENGTH: 20
211 <212> TYPE: DNA
212 <213> ORGANISM: Artificial Sequence
214 <220> FEATURE:
215 <223> OTHER INFORMATION: Synthetic linker
217 <400> SEQUENCE: 7
218 gatctcagtc agtcacccgg
220 <210> SEQ ID NO: 8

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221 <211> LENGTH: 16
222 <212> TYPE: PRT
223 <213> ORGANISM: Artificial Sequence
225 <220> FEATURE:
226 <223> OTHER INFORMATION: Synthetic oligopeptide
228 <400> SEQUENCE: 8
229 Gly Asn Val Gln Ala Ala Lys Asp Gly Gly Asn Thr Ala Ala Gly Arg
230 1 5 10 15
232 <210> SEQ ID NO: 9
233 <211> LENGTH: 16
234 <212> TYPE: PRT
235 <213> ORGANISM: Artificial Sequence
237 <220> FEATURE:
238 <223> OTHER INFORMATION: Trypanosomal peptide pepG
240 <400> SEQUENCE: 9
241 Tyr Gly Gly Gly Cys Thr Gln Ile Thr Glu Pro Thr Cys Asn Ser Ser
242 1 5 10 15
244 <210> SEQ ID NO: 10
245 <211> LENGTH: 10
246 <212> TYPE: PRT
247 <213> ORGANISM: Artificial Sequence
249 <220> FEATURE:
250 <223> OTHER INFORMATION: Trypanosomal peptide pepM1
252 <400> SEQUENCE: 10
253 Tyr Gly Val Pro Val Ala Thr Gln Thr Gly
254 1 5 10
256 <210> SEQ ID NO: 11
257 <211> LENGTH: 12
258 <212> TYPE: PRT
259 <213> ORGANISM: Artificial Sequence
261 <220> FEATURE:
262 <223> OTHER INFORMATION: Trypanosomal peptide pepCM1
264 <400> SEQUENCE: 11
265 Cys Tyr Gly Val Pro Val Ala Gln Thr Gln Thr Gly
266 1 5 10
268 <210> SEQ ID NO: 12
269 <211> LENGTH: 30
270 <212> TYPE: PRT
271 <213> ORGANISM: Artificial Sequence
273 <220> FEATURE:
274 <223> OTHER INFORMATION: Trypanosomal peptide pepCM3
276 <400> SEQUENCE: 12
277 Cys Tyr Gly Val Pro Val Ala Gln Thr Gln Thr Gly Val Pro Val Ala
278 1 5 10 15
279 Gln Thr Gln Thr Gly Val Pro Val Ala Gln Thr Gln Thr Gly
280 20 25 30
282 <210> SEQ ID NO: 13
283 <211> LENGTH: 47
284 <212> TYPE: PRT

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VERIFICATION SUMMARY

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